

In the Claims:

1. A wide band signal coder comprising:
means for subdividing signals over a bandwidth into a lower subband and a higher
5 subband signals,
a downsampler for downsampling said lower subband signals,
a low band speech coder coupled to said downsampler for encoding said
downsampled lower subband signals, and
a highband coder for coding said higher subband signal without downsampling,
10 and
a combiner for combining said higher and lower subband signals.
2. The coder of Claim 1, wherein said combiner includes a bandpass filter coupled to
said highband coder to bandpass said higher subband signal to complement the lower subband.
- 15 3. The coder of Claim 1, wherein said combiner includes upsampling said encoded
lower subband signals.
4. The coder of Claim 1, wherein said low band speech coder is a CELP coder.
- 20 5. The coder of Claim 1, wherein said highband coder is an LPC coder.
6. The coder of Claim 1, wherein said highband coder is random noise.
- 25 7. The coder of Claim 1, wherein said highband coder is noise excited LPC.
8. The coder of Claim 1, wherein said highband coder is gain-matched analysis by
synthesis.
- 30 9. The coder of Claim 1, wherein said highband coder is multi-pulse coding.

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10. A speech coding system comprising:

means for subdividing signals over a bandwidth into a lower subband and a higher subband,

5 a downsampler for downsampling said lower subband signals,

a low band speech coder coupled to said downsampler for encoding said downsampled lower subband signals,

a highband coder for coding said higher subband signal without downsampling;

10 a bandpass filter coupled to said highband coder to bandpass said higher subband signal to complement the lower subband;

a first decoder for decoding said encoded lower subband signals;

means for upsampling and lowpass filtering said lower subband signals to the same rate as the higher band signals;

15 a second decoder for decoding said higher subband signals and bandpass filtering said higher subband signals; and

20 and adder for summing said lower subband signals and said higher subband signals

11. The system of Claim 10, wherein said low band coder is a CELP coder.

20 12. The system of Claim 10, wherein said highband coder is random noise and said highband decoder includes a gain-scaled random noise generator.

25 13. The system of Claim 10, wherein said highband coder is a noise excited LPC coder and said decoder includes a gain-scaled random noise generator and the output is applied to an LPC synthesis filter.

30 14. The system of Claim 10, wherein said high band coder includes a gain-matched by synthesis coder and the highband decoder includes a codebook with allowable excitation vectors, a multiplier and an LPC filter.

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15. The system of Claim 10, wherein said coder is a multi-pulse coder and the decoder includes gain-scaling an approximation waveform that is gain-scaled and filtered by an LPC synthesis filter.

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16. A wideband speech decoder system comprising:
a first decoder for decoding encoded lower subband signals;
a second highband decoder for decoding higher subband signals at a higher sampling rate than said lower subband signals;
a converter for converting said lower subband signals to the same sampling rate as the higher band signals; and
an adder for summing said lower subband signals and said higher subband signals.

17. The decoder system of Claim 16, wherein said second decoder includes a gain-scaled random noise generator.

18. The decoder system of Claim 16, wherein said second decoder includes a gain-scaled random noise generator and the output applied to an LPC synthesis filter.

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19. The decoder system of Claim 16, wherein said second decoder includes a codebook with allowable excitation vectors, a multiplier and an LPC filter.

20. The decoder system of Claim 16, wherein said second decoder includes a multipulse waveform that is gain-scaled and filtered by an LPC synthesis filter.

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